

Notice of Allowability

Application No.

10/633,596

Examiner

David S. Blum

Applicant(s)

ZHONG ET AL.

Art Unit

2813

mw

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 11/11/05.
2. ☒ The allowed claim(s) is/are 4-10 and 13-17.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|--|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____ | 7. <input type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____. |

This action is in response to the amendment filed 11/11/05.

Reasons for Allowance

1. Claims 4-6, 9-10, and 13-17 are allowed.
2. The following is an examiner's statement of reasons for allowance:

Claim 4 limits the method of modulating the flatband voltage to a plurality of anneals with a different anneal gas in each anneal. This limitation, in combination with the other limitations of claim 14 is not taught or suggested by the prior art of record. Lee (US 006844604B2) is silent as to the annealing gas or different gasses for annealing for N and P devices. Barile (US3793090) teaches annealing in oxygen to modulate the flatband voltage but does not teach or suggest multiple anneals with different gasses. That Barile anneals in oxygen may keep the N-channel device from exposure to N₂, but not by a positive step in that annealing in oxygen does not preclude nitrogen from being a carrier gas and there are no positive steps to prevent exposure.

Claims 5-8 are allowed as being properly dependent upon allowed claim 4.

Claim 9 limits the step of modulating the flatband voltage to annealing for P-channel devices with N₂. This limitation, in combination with the other limitations of claim 9 is not taught or suggested by the prior art of record. Lee (US 006844604B2) is silent as to

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modulating the flatband voltage to annealing for P-channel devices with N₂. Barile (US3793090) teaches annealing in oxygen to modulate the flatband voltage modulating the flatband voltage to annealing for P-channel devices with N₂. That Barile anneals in oxygen may keep the N-channel device from exposure to N₂, but not by a positive step in that annealing in oxygen does not preclude nitrogen from being a carrier gas and there are no positive steps to prevent exposure.

Claim 10 is allowed as being properly dependent upon allowed claim 9.

Claims 13 limits the step of modulating the flatband voltage to preventing the N-channel device from exposure to N₂ by masking. This limitation, in combination with the other limitations of claim 13 is not taught or suggested by the prior art of record. Lee (US 006844604B2) is silent as to modulating the flatband voltage to annealing for P-channel devices with N₂. Barile (US3793090) teaches annealing in oxygen to modulate the flatband voltage modulating the flatband voltage to annealing for P-channel devices with N₂. That Barile anneals in oxygen may keep the N-channel device from exposure to N₂, but not by a positive step in that annealing in oxygen does not preclude nitrogen from being a carrier gas and there are no positive steps to prevent exposure.

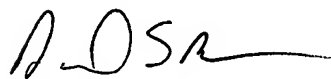
Claims 14-17 are allowed as being properly dependent upon allowed claim 13.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to David S. Blum whose telephone number is (571)-272-1687) and e-mail address is David.blum@USPTO.gov .

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carl Whitehead Jr., can be reached at (571)-272-1702. Our facsimile number all patent correspondence to be entered into an application is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



David S. Blum

November 21, 2005